

To Satellites

The diagram illustrates a mobile system architecture, labeled 20. It is divided into several functional blocks:

- Transmit Path (74):** Includes a Transmit Antenna, a Transmitter(s) block, and a dashed box 70 containing an Encoder, Modulator, and Up-converter. Handwritten labels 68, 52, and 72 are associated with these components.
- Receive Path (82):** Includes a Receive Antenna, a Receiver(s) block, and a dashed box 76 containing a Decoder, Demodulator, and Down-converter. Handwritten labels 86 and 78 are associated with these components.
- System Controller (84):** A central control unit with bidirectional connections to the Antenna Controller (86) and the Transmitter(s) block. It also has connections to "To all subsystems".
- Router/Server (50):** A central processing unit that includes mass storage. It is connected to the Transmitter(s) and Receiver(s) blocks.
- Control Unit & Display (54):** Connected to the Router/Server (50).
- Network Interfaces (58):** Three optional interfaces connected to the Router/Server: NATS Interface, CIS Interface, and IFE Interface.
- Local Area Network (56):** Connected to the Router/Server (50).
- User Devices (88):** Multiple user computers/PDAs (labeled #1, ..., #N) connected to the Local Area Network (56).

Handwritten annotations include "64" near the Transmitter(s) block, "66" near the Receiver(s) block, and "62" near the optional interfaces.

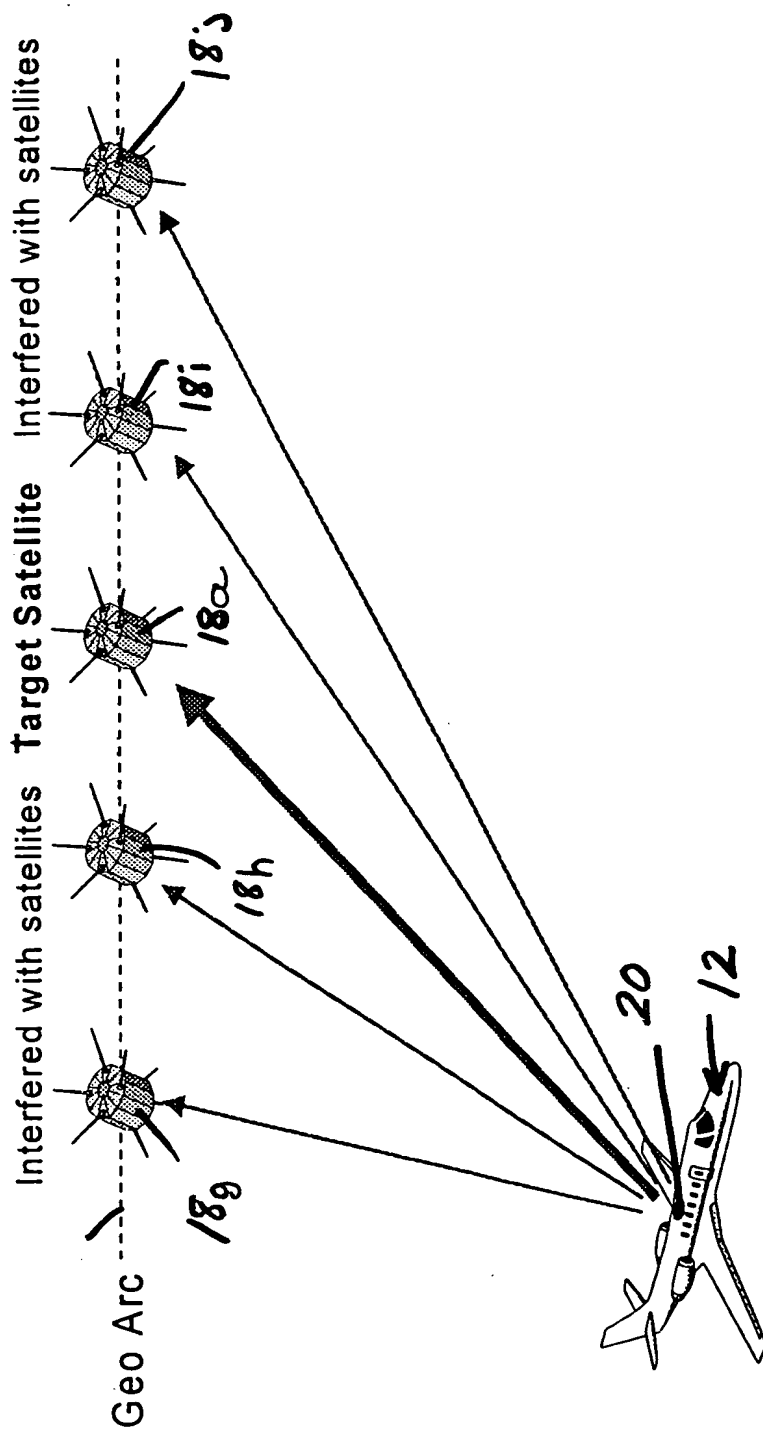


Figure 3

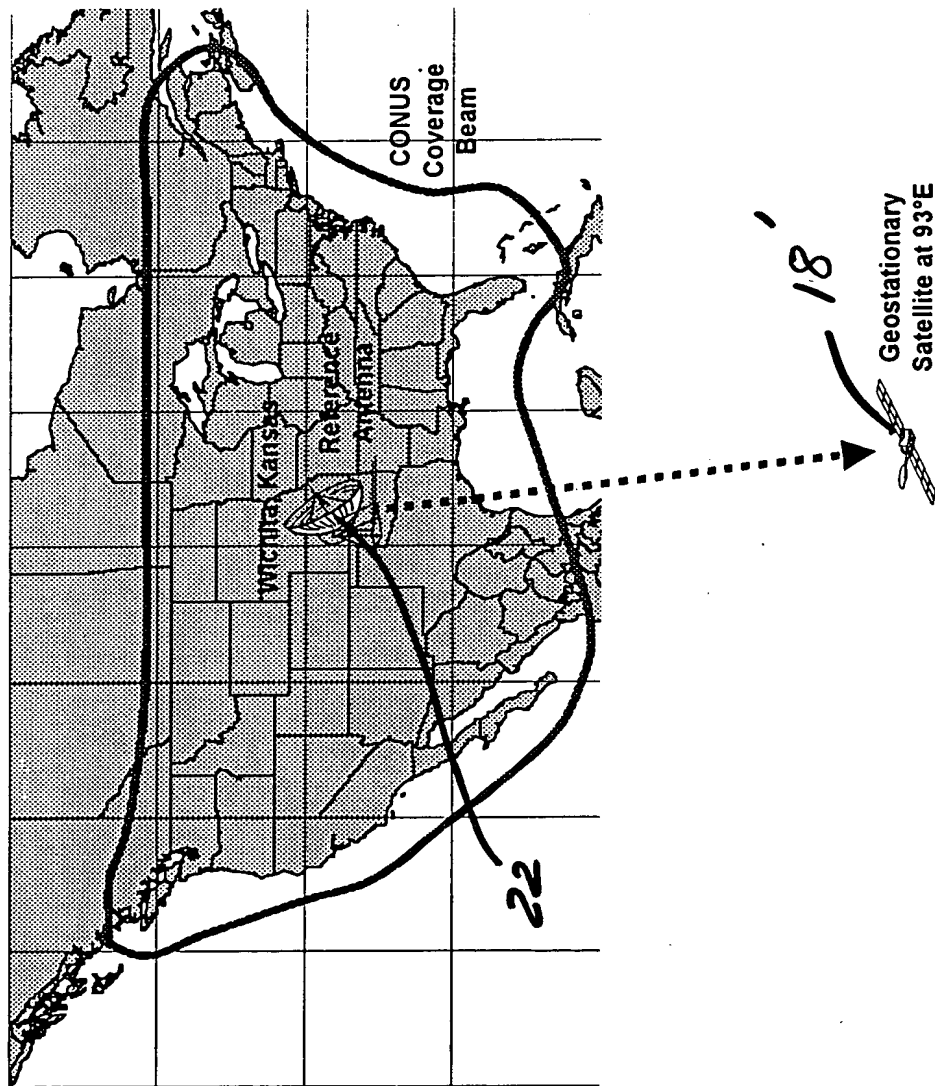


FIGURE 4

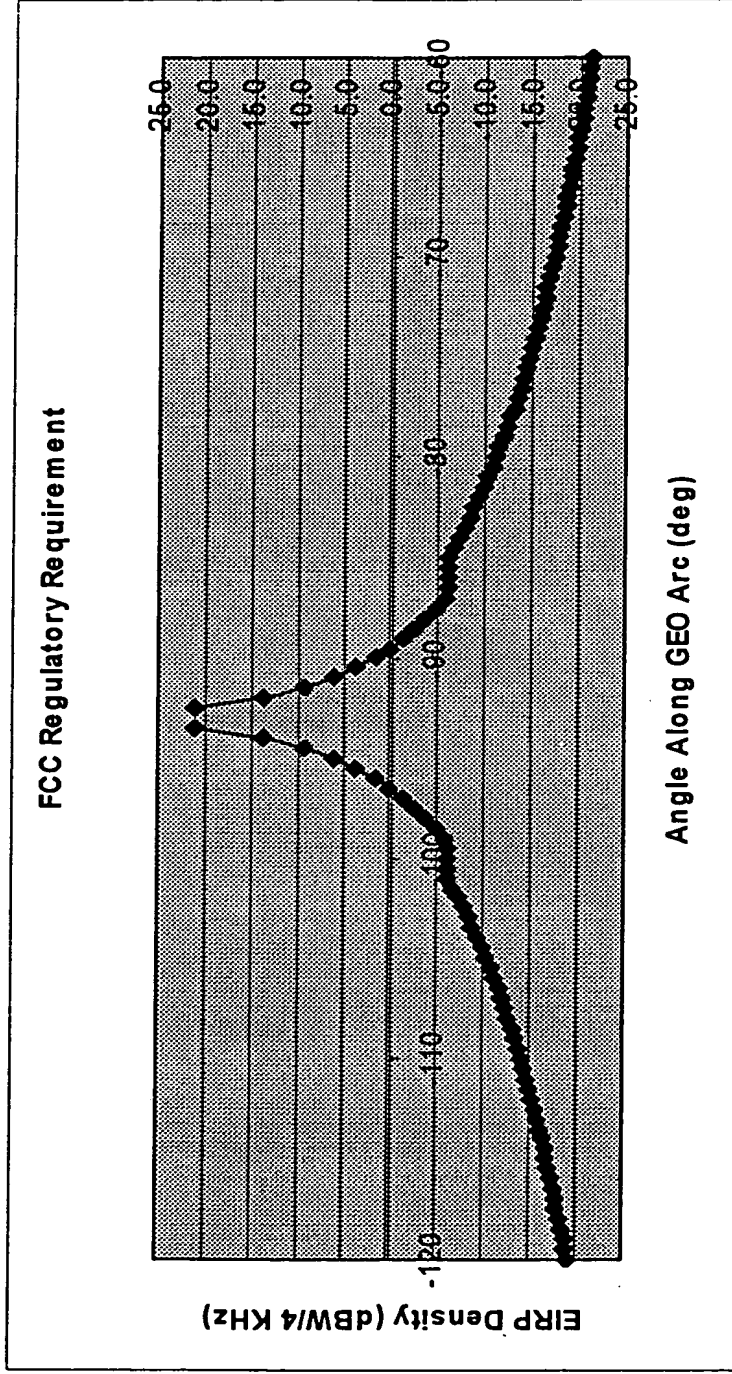


Figure 5

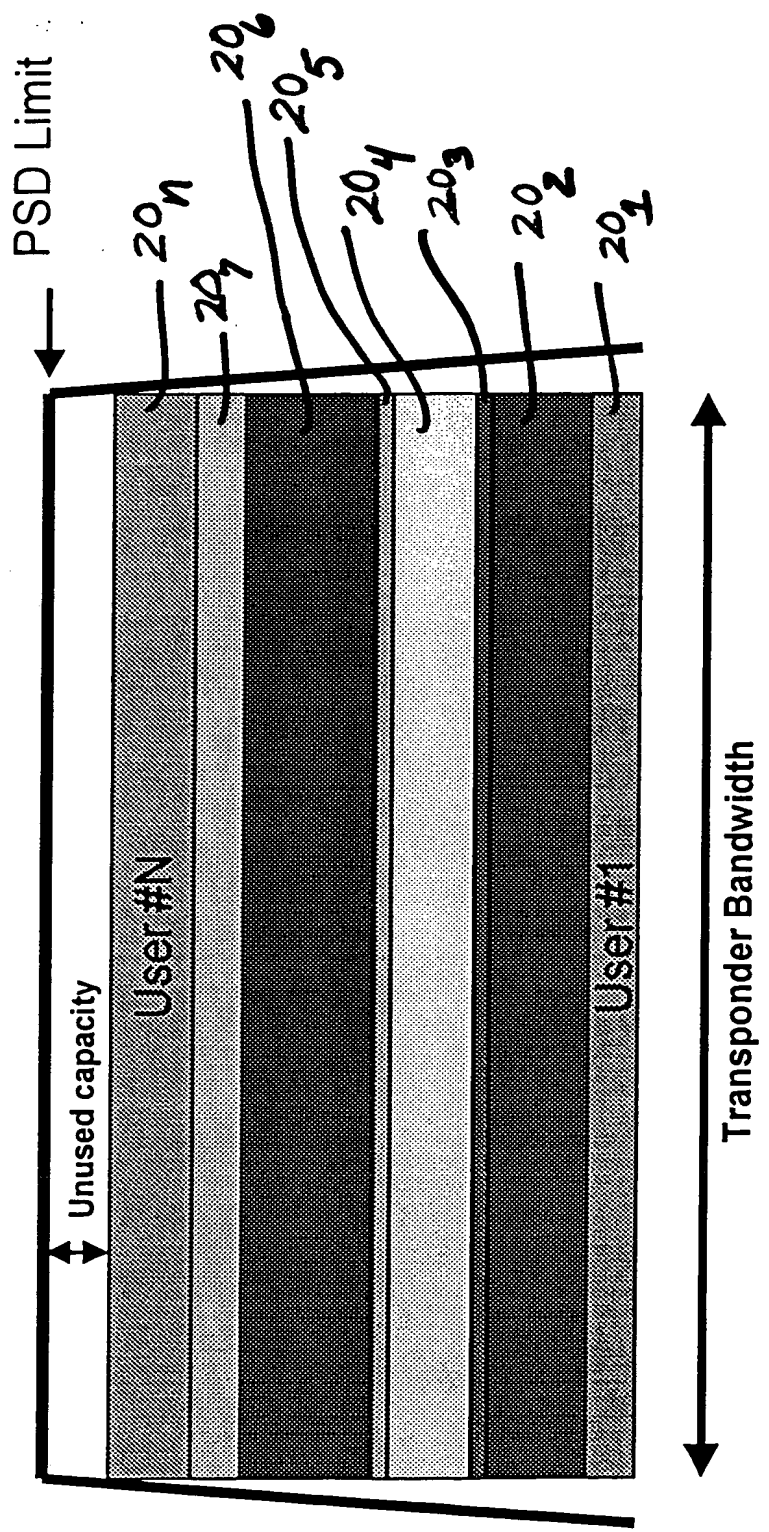


FIGURE 6

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graph TD
    Start([Start]) --> 100{Is Mobile Terminal 20n  
Making Request for Capacity  
or Release of Capacity?}
    100 -- release --> 102[Subtract PSD of  
Mobile Terminal  
from Aggregate PSD]
    100 -- request --> 104[Central Control System  
Determines PSD From  
Transmit Signal 20n]
    104 --> 106[Add PSD of Signal 20n  
to Aggregate PSD]
    106 --> 108{Will New Aggregate  
PSD Exceed  
Regulatory PSD Limit}
    108 -- Yes --> 110[Deny Request]
    108 -- No --> 114[Send Authorization to  
Transmit at Requested Data  
Rate (power) to Mobile  
Terminal 20n]
    108 -.-> 112[Request Queued  
Until Capacity  
is Available]
    112 -.-> 108
    114 --> End([End])

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FIG. 7

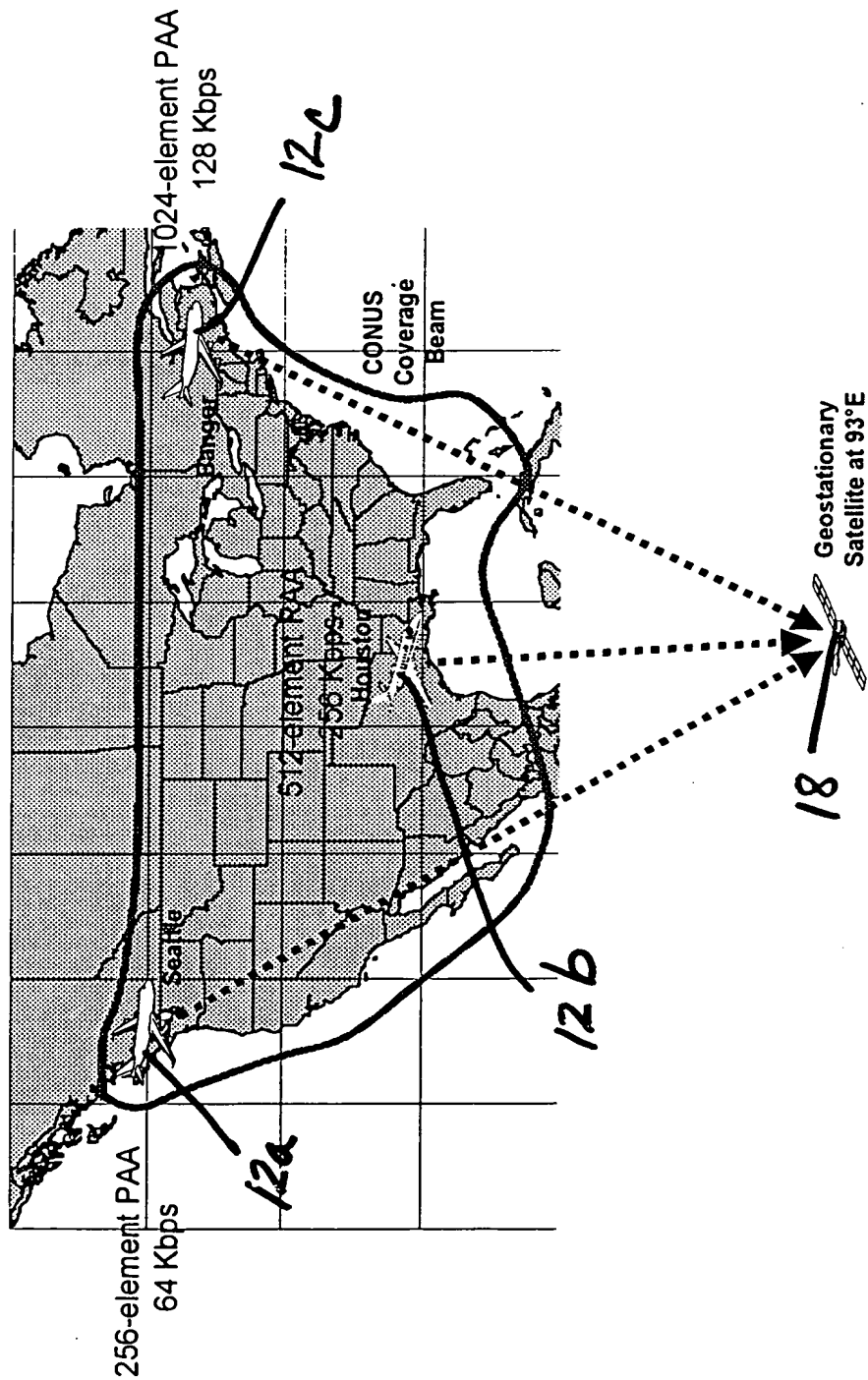


FIGURE 8

256 element
Phased Array Antenna,
34 dBW, 64 Kbps, Seattle

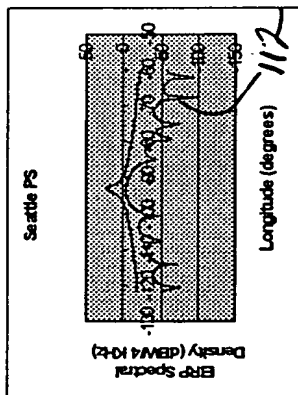


FIGURE 9

512 element
Phased Array Antenna,
39 dBW, 256 Kbps, Houston

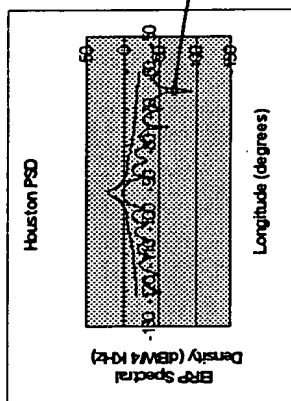


FIGURE 11

1024 element
Phased Array Antenna,
37 dBW, 128 Kbps, Bangor

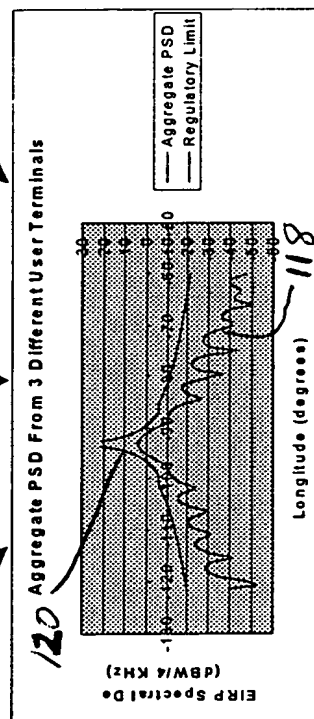
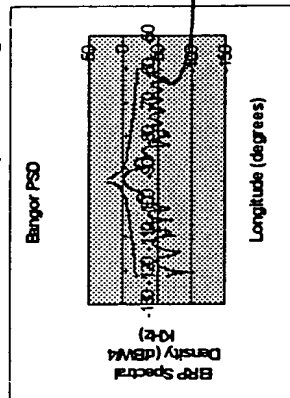


FIGURE 12